

REMARKS

Claims 1-20 are all the claims pending in the application.

I. Summary of Objections

(1) Specification Objection - The Examiner objected to the specification for various informalities on pages 9, 10 and 18. On pages 9 and 10, the Examiner objected to the reference numeral “1A” as being used for both a cable and an electrical connector. On page 18, lines 13-14, the phrase “an electrical connector 5 includes a conductor 41 covered with an insulator 42, and an insulation covered electric wire 40,” was deemed unclear by the Examiner.

Applicants respectfully request that the Examiner withdraw this objection based on the self explanatory amendments made to the specification.

(2) Claim Objections - The Examiner objected to claim 18 for a lack of antecedent basis. Applicants respectfully request that the Examiner withdraw this rejection based on the self explanatory amendments made to claim 18.

II. Summary of Rejections

(1) The Examiner rejected claims 1, 3, 4, 7, 8, 10 and 14-16 under §102(b) as being anticipated by Moore et al. (6,064,003; hereinafter “Moore”). Applicants respectfully traverse this rejection as follows.

The Examiner alleges that Moore discloses a terminal 71 fixed to a connector housing, a conductor 64 exposed from a covering and having a connecting portion connected to a

connection portion of the terminal, and a foam element 72 at a predetermined foam ratio located around the respective connection portions of the conductor and terminal. (Office Action, page 3)

However, Applicants respectfully submit that Moore fails to disclose, at least, a foam element having a “foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor,” as recited in claims 1, 8, 14 and 15. Moore discloses the use of a foam material 72 as a watertight seal. Beyond this, Moore goes no further. There is no disclosure anywhere within Moore even remotely related to selecting a foam ration for matching an impedance.

Thus, Applicants respectfully submit that independent claims 1, 8, 14 and 15 are allowable over Moore. Furthermore, claims 3, 4, 7, 10 and 16 are allowable, at least, by virtue of their dependency.

(2) The Examiner rejected claims 2, 6 and 9 under §103(a) as being unpatentable over Moore in view of Knapp (4,521,064). Applicants respectfully traverse this rejection as follows.

The Examiner concedes that Moore fails to teach or suggest the impedance of the foam element being closer to the impedance of the covering, but alleges that Knapp teaches this feature. In support of this rejection, the Examiner asserts that Knapp teaches a foam element which has a foam ratio of 35-55%. Furthermore, the Examiner alleges that it would have been obvious to one skilled in the art to provide the foam element of Moore to have impedance closer to the impedance of the covering since the lower foam ratio taught by Knapp would reduce the moisture proof qualities and a higher ration would reduce the compressibility of the material.

Applicants submit that the Examiner has failed to show *prima facie* obviousness. First, Knapp merely teaches that the foam ration is selected based on providing good moisture proof properties while having appropriate compressibility. (col. 4, lines 23-39) There is absolutely no contemplation within Knapp of matching impedance. Second, the Examiner provides no rational basis as to why one of ordinary skill in the art would be motivated to match the impedance. In fact, no reference supplied by the Examiner even discusses this feature of Applicants' claims. Without any rational basis for making the proposed modification, or a teaching within the references themselves, the Examiner fails to establish *prima facie* obviousness.

Thus, Applicants respectfully submit that claims 2, 6 and 9 are allowable over the applied combination. Further, these claims are allowable by virtue of their dependency.

(3) The Examiner rejected claim 5 under § 103(a) as being unpatentable over Moore in view of Hutchison (US 4,070,084). Applicants respectfully traverse this rejection as neither Hutchison nor Moore teach or suggest "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor," as recited in claim 1 from which claim 5 is dependent.

The Examiner concedes that Moore fails to teach or suggest the connector housing made of a foamed resin, but alleges that Hutchison teaches this feature. However, because Hutchinson fails to compensate for the deficiencies of Moore related to selecting a foam ratio to substantially match the impedance of the connection portion with the covering of the conductor, the applied combination does not teach every element of claim 5.

Thus, Applicants respectfully submit that claim 5 is allowable, at least by virtue of its dependency from claim 1.

(4) The Examiner rejected claim 11 under § 103(a) as being unpatentable over Moore in view of Urushibata et al. (US 5,057,650; hereinafter “Urushibata”). Applicants respectfully traverse this rejection as neither Urushibata nor Moore teach or suggest “a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor,” as recited in claim 8.

The Examiner concedes that Moore fails to teach or suggest a foam element being formed into a predetermined shape to be fitted to respective connecting portions, but alleges that Urushibata teaches this feature. However, Applicants submit that Urushibata fails to compensate for the above noted deficiencies of Moore with regard to claim 8.

Thus, Applicants respectfully submit that claim 11 is allowable, at least by virtue of its dependency from claim 8.

(5) The Examiner rejected claim 12 under § 103(a) as being unpatentable over Moore in view of Bates (4,864,081). Applicants respectfully traverse this rejection as neither Bates nor Moore teach or suggest “a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor,” as recited in claim 8 from which claim 12 depends.

The Examiner concedes that Moore fails to teach or suggest a foam element being formed as a tape to be wound around connecting portions, but alleges that Bates discloses this feature

and that winding tape around an electrical connection is well-known in the art. However, Bates fails to compensate for the above noted deficiency of Moore discussed above with regard to claim 8.

Thus, Applicants respectfully submit that claim 12 is allowable, at least by virtue of its dependency.

(6) The Examiner rejected claims 13 and 17 under §103(a) as being unpatentable over Beamenderfer et al. (US 4,834,674; hereinafter “Beamenderfer”) in view of Moore. Applicants respectfully traverse this rejection as neither Beamenderfer nor Moore teach or suggest “a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor,” as recited in claims 13 and 17.

The Examiner alleges that Beamenderfer discloses most of the features of the claimed invention, but fails to explicitly teach or suggest a resin being a foam resin. The Examiner compensates for this deficiency by applying Moore alleging that it teaches a foam resin. However, as discussed above, Moore fails to disclose a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor, and Beamenderfer fails to compensate for this deficiency.

Thus, Applicants submit that claims 13 and 17 are allowable over the applied combination.

(7) The Examiner rejected claim 18 under §103(a) as being unpatentable over Ichikawa et al. (US 5,780,774; hereinafter Ichikawa) in view of Moore. Applicants respectfully traverse this

rejection because one of ordinary skill would not combine the references as alleged, and even if combined, the references fail to teach or suggest all the features of claim 18.

The Examiner alleges that Ichikawa teaches most of the features of the claimed invention, but fails to teach or suggest a resin made of foam or molding a resin around foam resin members. The Examiner applies Moore alleging it makes up this deficiency.

Regarding claim 18, the combination cited by the Examiner fails to teach or suggest “forming a pair of foam resin covering members preliminarily formed into shapes which conform to an upper half shape and a lower half shape,” as recited in claim 18. Ichikawa teaches a manner of insert molding two cables together with a synthetic resin material for providing superior insulation and high connection strength. However, in contrast to claim 18, Ichikawa discloses that only the housing 4 which is made of a resin material, is preliminarily formed, thus comprising only a lower half connection portion. Then, after the lead wire 1 and the flexible flat cable 2 are welded together within the lower housing 4, the whole assembly is then insert molded together with the synthetic resin material 9, and thus, provide the superior insulation and high connection strength as taught by Ichikawa. (col. 2, lines 15-19; col. 3, lines 33-38) Thus, Ichikawa fails to disclose: (1) the use of any foam, and further, (2) discloses only a single preliminarily formed covering member. Further, Moore, which discloses no preliminarily formed foam material, does not compensate for this deficiency.

Furthermore, one of ordinary skill in the art would not be motivated to combine Ichikawa with Moore. Ichikawa teaches an insert molding technique wherein the conductors are insert molded with a synthetic resin material so that a high connection strength can be obtained

between the connection portions and the conductors of the electric wire. (col. 2, lines 15-20) If Ichikawa were modified with the foam of Moore as indicated by the Examiner, it would destroy the high strength between the connections portions and the conductors as taught by Ichikawa.

Thus, Applicants respectfully submit that claim 18 is allowable over the applied combination for at least these reasons.

(8) The Examiner rejected claim 19 under §103(a) as being unpatentable over Ichikawa in view of Bates. Applicants respectfully traverse this rejection because the applied combination fails to teach or suggest “wherein the foam resin tape has a predetermined foam ratio selected to substantially match the impedance of the connection portions with the covering of the conductor.”

The Examiner alleges that Ichikawa discloses most of the features of the claimed invention, but fails to disclose preparing a foam resin tape to be wound around the connection portions before molding the resin. The Examiner applies Bates alleging that it teaches winding a foam resin tape around the connection portion because winding a tape around a connection is well-known in the art. However, neither Bates nor Ichikawa teach or suggest any foam ratio. Furthermore, they fail to compensate for the above noted deficiency of Moore in this regard.

Thus, Applicants respectfully submit that claim 19 is allowable for at least this reason.

Amendment Under 37 C.F.R. §1.111
U.S. Appln No. 10/523,829

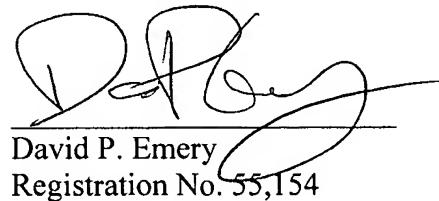
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VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



David P. Emery
Registration No. 55,154

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
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